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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/758,573	01/10/2001	Kendyl A. Roman		9422

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SUNNYVALE, CA 94087

EXAMINER	
NGUYEN, HAU H	

ART UNIT	PAPER NUMBER
2628	

MAIL DATE	DELIVERY MODE
11/24/2008	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	09/758,573	ROMAN, KENDYL A.	
	Examiner	Art Unit	
	HAU H. NGUYEN	2628	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *27 August 2008*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-9 and 11-33* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-9 and 11-33* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 8/27/2008 has been entered. As a result of Applicants' RCE, a new search has been performed. Rejections based on the newly cited references follow.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claims 1, 2, 5-9, 11-23, 25-27 and 29-33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Liu et al (U.S. 5,696,940, hereinafter "Liu") in view of Flurry (U.S. 5,684,968).

As per claim 1, Liu teaches *a method of increasing image processing performance by copying a first instan*ce (The words "first instance" can be broadly interpreted as just the first data being transfer from I/O memory to the main memory) *of an image data* (the input data from the I/O device 22 can be a video camera for capturing an image, a video monitor, printer, network port, etc, see col. 2, lines 40-41) *between a buffer* (not shown, but would have been

obvious to be included as suggested by Flurry below shown Fig. 14, item 1425, and col. 11, lines 24-26) *in main memory* (Fig. 1, main memory 14) *and an I/O memory* (RAM 20; it should be noted that Liu does not particularly called the RAM 20 an I/O RAM, however, the RAM 20 is used for storing the input data from the I/O device 22 before transfer into the main memory 14 and thus can be called an I/O RAM, see col. 1, lines 18-21). Liu further teaches a FIFO buffer within the RAM 20 to store the input data from the I/O device 22 by a DMA circuitry (18) that controls data transfers between the main memory (14) and I/O RAM (20). Liu further teaches a CPU 12 inherently includes the functionality of performing any kind of basic "CPU intensive operations" for a PC or any well known "host computer" can read data from main memory (14) and write the processed result into the main memory 14.

However, Liu fails to explicitly suggest or teach "*explicitly* copying a first instance of an image *into a second copy* of said image in a buffer in the *main* memory", and *whereby image processing time is reduced compared to the image processing time required if the CPU intensive operations were performed on the first instance of the image in the I/O RAM.*

However, this is what Flurry teaches (col. 2, line 64 to col. 3, line 12). Flurry also teach the CPU access is made directly to the extra second copy of the data in memory and not to the first instance in said I/O RAM before performing CPU intensive operations, and further teaches *image processing time is reduced compared to the image processing time required if the CPU intensive operations were performed on the first instance of the image in the I/O RAM* (col. 10, lines 36-45) (It should be noted that the Specification does not give any detail about the *comparison* between the *time* used by the CPU to perform processing image in the main memory

and the *time* used by the CPU to perform processing image in the I/O RAM, therefore, the interpretation of this limitation is at best understood by the examiner).

Therefore, it would have been obvious to one skilled in the art to utilize the method as taught by Flurry in order to enhance image manipulation without changing the original image.

As per claim 2, although not explicitly taught by Liu, Flurry teaches said main memory is cached (*in, for example, the image list 410 of the main memory*). Therefore, it would have been obvious to one skilled in the art to utilize the method as taught by Flurry in order to enhance image manipulation without changing the original image.

As per claim 5, Liu teaches said copying in accomplished by DMA circuitry (numeral 18, Fig. 1, col. 2, lines 43-46).

As per claim 6, as cited above, Liu teaches said copying in accomplished by calling a memory copy function (inherently disclosed, otherwise, the copying cannot be performed).

As per claim 7, as cited in claim 6, Liu teaches said image data is copied in a single call to said memory copy function.

As per claim 8, Liu further teaches a subset of said image data is copied one line at a time by repeated calls to said memory copy function (col. 2, lines 47-57).

As per claim 9, Liu also teaches a subset of said image data is copied by repeated calls to said memory copy function (by incrementing each line, col. 3, lines 47-65).

As per claim 11, although not explicitly taught by Liu, Flurry teaches said I/O RAM is associated with a video digitizer (col. 5, lines 45-55).

Therefore, it would have been obvious to one skilled in the art to utilize the method as taught by Flurry in combination with the method as taught by Flurry in order to perform the format conversion of the image for the CPU to process.

As per claim 12, as cited in claim 1, Liu-Flurry combined reference teaches *a method of increasing image processing performance by explicitly storing the processed results of CPU intensive operations in a first instance of a buffer in main memory prior to copying the processed data into a distinct second copy of the processed data in an image in an I/O ram, wherein the CPU results are written directly to the first instance of the processed data in said main memory and not to the distinct second copy in said I/O RAM* (Liu and Flurry both teach the CPU access and process image data stored in main memory as cited above, Flurry teaches transferring the processed image data to the I/O RAM in order to be displayed, see Fig. 8 and 11, col. 10, lines 26-35, and col. 6, lines 33-42 with reference to Fig. 4).

Therefore, it would have been obvious to one skilled in the art to utilize the method as taught by Flurry in order to enhance image manipulation without changing the original image.

As per claim 13, as cited above, Liu teaches said I/O RAM is associated with a video output device (*the input data from the I/O device 22 can be a video camera for capturing an image, a video monitor, printer, network port, etc, see col. 2, lines 40-41*).

As per claim 14, as stated in claim 13, Liu teaches said video output device drives a computer monitor (i.e. a video monitor).

As per claim 15, Liu said video output device outputs video signals (inherently disclosed to output video signals for display).

As per claim 16, as cited above in claims 1 and 12, Liu in combination with Flurry teaches *a machine for image processing comprising*:

a) a main memory for storing an image;

b) a processor for processing said image;

c) an I/O device; and

d) a means for copying image data between said main memory and said I/O device, wherein said image data is copied from said I/O device to a second copy of said image data in a buffer in said main memory prior to being processed by said processor (see claim 1) *or*

wherein said processor processes said image data using a buffer in said main memory before copying the processed image data from said main memory, to said I/O device (see claim 5),

whereby image processing time is reduced (see claim 1).

As per claim 17, as cited above, Liu teaches said I/O device is a means for inputting an image (such as video camera for capturing an image, col. 2, lines 40-41).

As per claim 18, as cited above, Liu teaches said I/O device is a means for outputting an image (such as video monitor, col. 2, lines 4—41).

As per claims 19 and 20, although Liu fails to teach the processor executes programs to enhance, compress/decompress, encrypt/decrypt (encode/decode), or reformat said image data, Flurry teaches the applications includes compressing and decompressing (col. 2, lines 44-61), and enhance said image data (col. 2, lines 32-40). Therefore, it would have been obvious to combine the teachings in order to reduce the data size, and thus reducing the bandwidth.

As per claim 21, the combined teachings of Liu and Flurry, as addressed to claims 1 and 12 are recited above, disclose *a network of machines comprising:*

a) one or more first machines which implement(s) the method of claim 1; and

b) one or more second machines which implement(s) the method of claim 12,

i) whereby a video signal is digitized and encoded by at least one of said first machines, transmitted across said network to other of said second machines that decode and output the results (see for example, Liu, col. 1, lines 10-17, and Flurry, col. 2, lines 41-60).

Claim 22, which is similar in scope to claim 1 as addressed above, is thus rejected under the same rationale.

As per 23 and 25, which are similar in scope to claims 19-20 as addressed above, are thus rejected under the same rationale.

Claim 30, which is similar in scope to claim 5 as addressed above, is thus rejected under the same rationale.

Claim 31, which is similar in scope to claim 6 as addressed above, is thus rejected under the same rationale.

Claims 32 and 33, which are similar in scope to claim 5 as addressed above, are thus rejected under the same rationale.

As per claim 26, as stated above in claims 1 and 12, Liu in combination with Flurry teaches *a machine for image processing comprising:*

a) an image output device requiring image data for output;

b) a processor for generating said image data, connected to said output device;

c) a main memory, connected to said processor (see Liu, Fig. 1);

d) a means for copying, after said processor generates a first set of image data in said main memory, said first set of image data from said main memory to a second copy of said image data in said output device (sending processed image from main memory to VRAM for display as taught by Flurry as cited above referring to claim 12)*, whereby image processing time is reduced compared to the image processing time required if the processor generated the image data directly in said output device instead of said main memory* (see Flurry, col. 10, lines 36-45, referring to claim 1).

As per claim 27, as cited in claims 19 and 20 above, the combined Liu-Flurry teaches said processor performs image processing to enhance said image data prior to copying to the output device.

As per claim 29, as also cited in claims 19-20, the combined Liu-Flurry reference teaches said processor performs image processing to decompress said image data prior to copying to the output device.

4. Claims 3-4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Liu et al (U.S. 5,696,940 hereinafter "Liu") in view of Flurry (U.S. 5,684,968) as applied to claim 1 above, and further in view of Anderson et al (U.S. 6,338,119, hereinafter "Anderson").

The teachings of Liu and Flurry are given in previous paragraph of this Office action. However, the combined system fails to explicitly teach a L1 and L2 cache memory. It is well known and well used in the art to include a L1 and a L2 cache memory in order to speed up the system processing by access data locally from the cache instead of main memory. Furthermore,

Anderson teaches a L1 (Fig. 1, 104) and L2 (106) cache memory. It would have been obvious to one of ordinary skill in the art at the time the present invention was made to combine the teachings of Anderson into the combined system of Liu and Flurry in order to provide fast access to the storage device and thus improves the overall system performance because a cache is a much faster storage device than any other RAM for the CPU or other computation device. Therefore, at least claims 3-4 would have been obvious.

5. Claims 24 and 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Liu et al (U.S. 5,696,940 hereinafter "Liu") in view of Flurry (U.S. 5,684,968), and further in view of Cullen et al (6,592,629 hereinafter "Cullen").

As per claims 24 and 28, the teachings of Liu and Flurry are given above. However, the combined system fails to explicitly teach said processor executes programs to encrypt/decrypt said image data. These are what Cullen teaches. Cullen teaches remote document image storage and retrieval system for a multifunctional peripheral comprising a workstation (630) and a multifunction machine (140) includes a compress/decompress (252), an encrypt (253) and decrypt (254). It would have been obvious to one of ordinary skill in the art at the time the present invention was made to combine the teachings of Cullen into the combined system of Liu and Flurry in order to reduce overall storage space and provide fast and secure transmitted over the bus or network as taught by Cullen (col. 5, lines 16-63).

Conclusion

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hau H. Nguyen whose telephone number is: 571-272-7787. The examiner can normally be reached on MON-FRI from 8:30-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kee Tung can be reached on (571) 272-7794.

The fax number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/Hau H Nguyen/

Primary Examiner, Art Unit 2628